

CLAIMS

What is claimed is:

1. A system that facilitates signal transmission and reception, comprising:
a first component configured to convey signals within a transmission and reception frequency band; and
a second component that interfaces the first component to a front-end and a back-end, the second component providing isolation between the first component and the front and back ends.
2. The system of claim 1, the first component provides concurrent signal transmission and reception.
3. The system of claim 1, the first component comprising two or more filters.
4. The system of claim 3, the two or more filters configured to determine the transmission and reception frequency band.
5. The system of claim 1, the second component comprising two 3db hybrid couplers.
6. The system of claim 5, the 3db hybrid couplers comprising at least one of a Lange coupler and a discrete coupler.
7. The system of claim 6, the Lange coupler comprising gold traces on a substrate.
8. The system of claim 1 employed within at least one of a mobile phone, a web phone, a personal data assistant (PDA), a hand-held PC, a pocket PC, a palm-pilot, a laptop, a tablet PC, a Notepad, a GPS, a pager, a personal computer, a mainframe, and a workstation.

9. A balanced duplexer, comprising:
 - a first filter;
 - a second filter, the first and second filters have a substantially similar input and output impedance;
 - a first coupler that interfaces the first and second filters to a processing unit of a device and a first termination; and
 - a second coupler that interfaces the first and second filters to an antenna, a detector and a second termination, the balanced duplexer is employed to facilitate transmitting and receiving signals through the first and second filters.
10. The system of claim 9, the first and second filters are employed such that a portion of the signal power is directed through one of the filters and the remaining signal power is directed through the other filter.
11. The system of claim 10, the portion of signal power directed to respective filters is determined by a power ratio.
12. The system of claim 10, the portion of signal power directed through respective filters is about one half the total power.
13. The system of claim 10, the first and second filters configured such that if one filter becomes inoperable, the other filter can be utilized to process the full signal power.
14. The system of claim 9, the balanced duplexer buffers an input and an output stage.
15. The system of claim 9, the first and second couplers being 3 dB hybrid couplers comprising one of a Lange coupler and a discrete coupler.

16. The system of claim 15, the Lange coupler providing isolation between the first and second filters and the processing unit and the first and second filters and the antenna and detector.
17. The system of claim 9, the first and second terminations is about 50Ω .
18. The system of claim 9, the first and second filters comprising acoustic filters comprising SAW and BAW filters.
19. The system of claim 9 employed within at least one of a mobile phone, a web phone, a personal data assistant (PDA), a hand-held PC, a pocket PC, a palm-pilot, a laptop, a tablet PC, a Notepad, a GPS, a pager, a personal computer, a mainframe, and a workstation.
20. The system of claim 9, the first and second couplers divert reflected power into the first and second terminations, respectively.
21. The system of claim 9, the first and second couplers reduce reflected energy by combining reflected energy that is 180 degrees out of phase.
22. The system of claim 9, the first and second filters employed in the reception of a signal to improve LNA and antenna matching.
23. A methodology for transmitting signals, comprising:
 - conveying a generated signal to a balanced duplexer, the signal divided into two portions, a first portion with a first signal power transmitted through a first filter of the balanced duplexer and a remaining portion transmitted through a second filter, the remaining portion associated with a remaining signal power;
 - combining the first portion and second signal portions, and
 - transmitting the signal.

24. The method of claim 23, further comprising employing 3 dB hybrid couplers to divide and combine the generated signal.
25. The method of claim 24, further comprising providing isolation between the 3 dB hybrid couplers and a signal generating and a transmitting component.
26. A methodology for receiving signals, comprising:
accepting a signal;
conveying the signal to a balanced duplexer, the signal conveyed through at least one filter of the balanced duplexer, and
isolating the signal from a transmitted signal.
27. A system that facilitates concurrent signal transmission and reception *via* a balanced duplexer, comprising:
means for coupling a generated signal with the balanced duplexer;
means for coupling a received signal with the balanced duplexer;
means for isolating the generated signal from the received signal;
means for filtering the generated and received signals, and
means for diverting power reflections associated with the generated and received signals to terminations.